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ABSTRACT

This report of the findings of the working group on "recruitment" of the International Congress on the Education of Secondary School Physics Teachers held in Hungary in September, 1970, includes reasons for the shortage of physics teachers (low salaries, excessive class load, lack of prestige, and inadequate programs of teacher preparation), characteristics of good physics teachers, and recommendations for increasing recruitment and retention of teachers. These recommendations include overcoming the previously identified reasons for the shortage, providing apparatus, establishing contact between university professors and secondary school teachers during professional society meetings, and providing, possibly by UNESCO, information from all countries pertinent to class load, student load, salaries compared with industrial positions, presence of national teachers examinations, and recruitment methods. (AL)

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RECRUITMENT OF SECONDARY SCHOOL PHYSICS TEACHERS--

AN INTERNATIONAL VIEWPOINT

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THE DELIBERATIONS OF GROUP B - RECRUITMENT

Chairman - Professor Kroebel, West Germany
Reporter - Professor Mayfield, U. S. A.

INTRODUCTION

In order that the teaching of physics in the secondary schools of the world may continue and improve, it is necessary to select with care those people who will eventually become secondary physics teachers. The deliberations of Working Group B of the Eger Conference have been directed toward a broadly inclusive definition of recruitment which herein is taken to mean any and all things having to do with identifying and enlisting those people who ought to be secondary physics teachers and retaining and improving teachers already in service. In accomplishing these ends, some encroachment upon the deliberations of other working groups is anticipated, but hopefully, it will not be unwelcome. .

THE PROBLEM

With the exceptions of France where teachers are plentiful, and DDR where central planning continues to provide an adequate supply of teachers, the other countries represented in Group B - Czechoslovakia, Ireland, Spain, U. S. A. and West Germany - report a general overall need for more and better qualified teachers, with the most notable shortages reported in Ireland, U. S. A. and West Germany. The probable reasons for the short supply of teachers include:

1. Relatively low salary (beginning salaries are only one-half to three-fourths of those for similar preparation in industry in most countries).
2. Overload of classroom work (24-34 hours per week reported do not include preparation time for laboratory work).
3. Longer initial preparation time (in several countries one additional year of preparation is required).
4. Lack of prestige (in many countries the only really respectable teaching positions are in the universities).
5. Failure of the physics community to give proper attention to the preparation of secondary teachers (only a very few universities in any of the countries provide for pre-service teachers a curriculum different from the normal physics major and directed entirely toward the peculiar needs of secondary teachers.)

CHARACTERISTICS OF A GOOD TEACHER

It seems logical that good teachers possess certain common characteristics which should be identifiable in prospective teachers early enough to help avoid mistakes in recruitment. The following lists represent the thinking of the Group concerning - first - characteristics desirable in any secondary teacher; and - second - characteristics desirable in physics teachers:

1. Intelligence somewhat above the average.
2. Intellectual integrity.
3. Enthusiasm for learning.
4. Good manual dexterity.

5. Ability to communicate easily and clearly.

6. Willingness to work hard.

7. Sufficient ambition to become, and remain, professionally alive.

8. An easy manner with people.

Specific characteristics of physics teachers should include:

1. An inherent interest in technology having its origin in physics and related sciences.

2. More than average ability in mathematical manipulation.

3. A general orderliness of thought and action.

The above are not proposed as exhaustive lists, rather as beginning points for further study by those who engage in teacher recruitment.

RECOMMENDATIONS

The following recommendations are based upon the apparent reasons for teacher shortages, the characteristics desirable in good teachers, and the urgent need to improve the lot of the secondary physics teacher.

1. It seems likely that students in many countries may soon begin taking physics at an earlier age than is presently the case, thus adding further to the need for physics teachers. Therefore, it is recommended that teachers with less physics content preparation be recruited for these positions as an emergency measure. However, these teachers should not be prohibited from moving to higher level teaching after further preparation.

2. The financial rewards for the very good teacher seem to be little different from those for the very poor teacher in many countries. In order to provide soon significant incentive for persons becoming and remaining good teachers, it is recommended that the education division of the physical societies of the various countries form committees of their members to devise ways of identifying good teachers and produce suggestions for rewarding them.

3. It is further recommended that:

   a. Provision be made whereby a prospective teacher can graduate in the same length of time as any other science student.

   b. Strong efforts be made to reduce the number of hours which teachers of physics must spend with their classes (providing technical assistants for teachers is urged as one method of implementing this recommendation).

   c. Sufficient apparatus for teaching purposes be made available at once and apparatus be up-dated continuously to take advantage of new curricula and new methods as they are developed.

   d. A portion of the time of physical society meetings be set aside for conferences of university professors and secondary teachers, in which "new" physics and mutual problems may be discussed. Such conferences would serve to retain and improve teachers of secondary physics - an important phase of recruitment.

It is recognized that the recommendations listed under 3. above require the very active support of physicists - each in his own country - if efforts to make physics teaching a more desirable career are to be made fruitful.

4. Finally, it is recommended that an appropriate international organization (possibly UNESCO) provide physicists with information from the countries of the world to include (a) average class hours per week, (b) number of students

per teacher, (c) beginning and maximum salaries versus comparable industrial positions, (d) national teachers' examination or not, and (e) recruitment methods.

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